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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

STEVENS, MAURICE E

ART UNIT

PAPER NUMBER

2855

DATE MAILED: 01/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/559,867

Applicant(s)

TETZLAFF ET AL.

Examiner

Maurice Stevens

Art Unit

2855

HL

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 21-36 and 47-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 21-23, 24-36 and 47-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

Art Unit:2855

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 22-23 and 2836 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22, lines 4-9 do not positively recite the limitation "the probe". There is no structural relationship describing the probe, it is like the applicant pulled it out of no where.

Claim 28, lines 3-4 where it recites "aid probe", the limitation said probe lacks antecedent basis.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 21, 24-27 and 47-51 are rejected under 35 U.S.C. 102(b) as being anticipated by Caldwell (3915136).

Art Unit:2855

Caldwell discloses a diaphragm assembly for being connected between an engine exhaust path and- an engine control unit, said diaphragm assembly comprising a diaphragm housing (fig. 1; {16}), a diaphragm (fig. 1,{18}) positioned in said housing and separating a first chamber (fig.1, {20a}) and a second chamber (fig.1, {20b}), first chamber configured to be in flow communication with the engine exhaust path, and said second chamber configured to be in flow communication with the engine control unit (fig. 1, col. 4, lines 62-68 and col.5, lines 1-18). wherein said diaphragm housing comprises a first housing member (fig.1, {20}) and a second housing member (fig. 1, {21}) said diaphragm between said first and second housing members (fig.1, {20,21}), wherein an inner surface of said first housing member also is a side wall of said first chamber, said inner surface having a conical shape to facilitate drainage of water from said first chamber (first housing member, {the walls of the upper portion 20a and 20b}), wherein said first chamber comprises a first volume and said second chamber comprises a second volume, said first volume greater than said second volume (fig.1, {20 {first volume}>21 {second volume}}), wherein said diaphragm comprises an o-ring and a diaphragm member integral with said o-ring (fig. 2, {188 {diaphragm} and 210 {o-ring, sealing engagement, flange}}), a method for securing a diaphragm assembly to an engine, said method comprising the steps of: coupling an inlet (fig. 1, {22}) of the diaphragm assembly in flow communication with an exhaust path of the engine (fig. 1 and col. 4, lines 62-68), and coupling an outlet (fig. 1, {23}) of the diaphragm assembly to an electronic control unit of the engine (fig. 1 and col.5, lines 1-18), diaphragm means (fig. 1, {18}) configured to be coupled between an exhaust path of the engine and an

Art Unit:2855

engine control unit and for transmitting exhaust pulses to the control unit (col. 1, lines 62-68 and col. 5, lines 1-18), wherein said diaphragm means comprises a diaphragm housing, and a diaphragm positioned in said housing and separating a first chamber and a second chamber, said first chamber configured to be in flow communication with the engine exhaust path, and said second chamber configured to be in flow communication with the engine control unit (fig. 1, {20a and 20b}), wherein said diaphragm housing comprises a first housing member and a second housing member (fig. 1, {20a {upper portion} and 20b {lower portion}}), said diaphragm between said first and second housing members (fig. 1, {18}), wherein an inner surface of said first housing member also is a side wall of said first chamber, said inner surface having a conical shape to facilitate drainage of water from said first chamber (fig. 1, {20a {upper portion side wall}}), a kit for a marine engine, comprising a diaphragm assembly comprising a diaphragm housing (fig. 1, {16}), and a diaphragm (fig. 1, {18}) positioned in said housing and separating a first chamber and a second chamber, said first chamber configured to be in flow communication with an engine control unit, and said second chamber configured to be in flow communication with an engine exhaust path (col. 4, lines 62-68 and col.5, lines 1-18), wherein said first chamber comprises a first volume and said second chamber comprises a second volume, said first volume greater than said second volume (fig. 1, {20a first volume and 20b second volume...20a > 20b}) and wherein said diaphragm comprises an o-ring and a diaphragm member integral with said o-ring (fig.2, {188 and 210}).

Art Unit:2855

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caldwell (3915136).

Caldwell does not implicitly disclose a diaphragm assembly wherein said o-ring and said diaphragm member are fluorosilicone, wherein said diaphragm housing comprises an o-ring groove for receiving said o-ring, wherein said diaphragm housing comprises a first housing member and a second housing member, said first and second housing members each comprising an o-ring groove so that when said housing members are assembled, said diaphragm o-ring is trapped between said first and second housing members in said grooves, at least partially inserting a probe through an opening in the engine securing the probe in place so that at least a portion of the probe extends into an exhaust path of the engine; engaging one end of a tube to the probe so that during engine operation. exhaust pulses sensed by the probe are transmitted through the probe to the tube; and engaging a second of the tube to the inlet of the diaphragm assembly

Caldwell does not implicitly disclose that said o-ring and said diaphragm member are fluorosilicone but at the time the invention was made it would have been obvious to use fluorosilicone as the material of the o-ring and the diaphragm because a flexible and high

Art Unit:2855

temperature resistant material would have had to been used for dealing with the temperature of exhaust gas and remain flexible so the diaphragm can vibrate etc.

Caldwell does not implicitly disclose wherein said diaphragm housing comprises an o-ring groove for receiving said o-ring but it would have been obvious at the time the invention was made to use a groove to hold an o-ring into place and to further make a tight seal or engagement between the o-ring and the diaphragm. This is a well known feature an o-ring with a groove.

Caldwell does not implicitly disclose wherein said diaphragm housing comprises a first housing member and a second housing member, said first and second housing members each comprising an o-ring groove that when said housing members are assembled, said diaphragm o-ring is trapped between said first and second housing members in said grooves but as stated on the paragraph above is the motivation to have a groove with an o-ring but it is also obvious to make more than one o-ring with a groove if you already have one.

Breton discloses at least partially inserting a probe through an opening in the engine securing the probe in place so that at least a portion of the probe extends into an exhaust path of the engine (column 5, lines 53-63); engaging one end of a tube to the probe so that during engine operation. exhaust pulses sensed by the probe are transmitted through the probe to the tube; and engaging a second of the tube to the inlet of the diaphragm assembly (fig. 1, {40}), . wherein securing the probe in place comprises the step of threadedly engaging the probe within an opening in the engine (fig. 2, {13 and 131}), probe means for sensing exhaust gas pressure

Art Unit:2855

during engine operation, and engagement means secured to said probe means for securing said probe so that said probe, at least partially extends within an exhaust path of the engine during engine operation (fig. 3, {131 and 13}), wherein said probe means comprises an elongate probe body comprising a hollow, cylindrical shaped member, wherein said cylindrical shaped member comprises at least one opening through a side wall of said cylindrical shaped member (fig 3, {131a-f and 13}), wherein three openings extend through said cylindrical shaped member side wall, said openings being radially spaced about 120° apart from each adjacent opening (fig 3, {131a-f and 13}), wherein said elongated probe body further comprises a cap secured to and closing an open end of said cylindrical shaped member (fig. 1, {131}), a pellet located within said probe means, wherein said pellet comprises sintered metal, wherein said engagement means comprises an engine engagement assembly secured to said probe means and configured to engage to the engine so that said probe means at least partially extends into the engine exhaust path (fig. 1, {131}), further comprising a probe for being secured to the marine engine, said probe comprising an elongate probe body, and an engine engagement assembly secured to said probe body and configured to engage to the engine so that said probe body at least partially extends into the engine exhaust path (fig. 3, {131 and 13}), wherein said elongate probe body comprises a hollow, cylindrical shaped member comprising at least one opening through a side wall of said cylindrical shaped member (fig. 3, {131e and f}), -wherein three openings extend through said cylindrical shaped member side wall, said openings being radially spaced about 120 degrees apart from each adjacent opening (fig.3, {131af and e}) and

Art Unit:2855

wherein said elongate probe body further comprises a cap secured to and closing an open end of said cylindrical shaped member (fig. 3, {131}).

Since Caldwell and Breton are both from the same field of endeavor, the purpose disclosed by Breton would have been recognized in the pertinent art of Caldwell.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Caldwell with the teachings of Breton for the purpose of having a probe that is inserted into an exhaust tube to detect the pressure of oxygen in exhaust gas.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maurice Stevens whose telephone number is (703) 306-5895. The examiner can normally be reached on Monday-Thursday from 7:00 AM-3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Hezron Williams, can be reached on (703) 305-4705. The fax phone number for this Group is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

MS/2855

Application/Control Number: 09/559,867

Page 9

Art Unit:2855

12-13-02



HARSHAD PATEL
PRIMARY EXAMINER